Information management in vegetable-fruit Producer Organizations supported by ICT

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Abstract

The vegetables-fruit sector has a many-sides role in national economy in Hungary. Our natural resources and traditions of production render possible to produce high-quality vegetables and fruits by which products not only domestic consumer demands can be satisfied. Marketing of farm products and buying inputs for the production are among the biggest challenges for small-holder farmers. Farmers have often founded co-operatives or producer organizations to assist them in achieving the highest price from the market and paying the lowest price for the input.

We would like to introduce the vegetable-fruit sector and mission of Producer Organization. The Producer Organizations play a great part in rural development and in Common Agricultural Policy of European Union. More and more farmers join one of POs, because they get EU subsidization through this organization only.

We construct a situation report about usage and state of supply of information and communication technologies. Trough their business process we present what kind of ICT system usually help their and what opportunities are presented their.

As study case we examined Producer Organizations. We introduce what kind of information and communication technologies they use.

Key words

Producer Organizations, information technology, information management

Introduction, about Producer Organizations

Changes in people's lifestyles and the emergence of nutritional science have created favorable opportunities for a boom in fruit and vegetable consumption, which has been fully, exploited by the adaptive fruit producer and exporter countries. Unfortunately, Hungary is not one of these countries. Affected by a number of uncertainty factors, the Hungarian fruit and vegetable sector has fallen behind international trends, seeking opportunities for survival. (Erdész F., 2007) Only small increase of export has been achieved, while the share of import has steadily increase nod the Hungarian market. As a result of the expensive production, Hungary is unable to compete with the prices of mass products produced in China or Poland.

Fruit and vegetable production represents the essential livelihood or a supplementary source of income for thousands of Hungarian families. It plays an important role in utilizing

ecological conditions and the local employment of the rural population. The two sectors provide 10-12 % of the total agricultural production and 18-20% of cultivation and horticultural production. In terms of its export sales, the share of the sectors from the total agricultural export is 17-20%.

The per capita domestic consumption of fruits and vegetables is significant, 211 kg (2004) (Erdész, 2007). However, the international comparison reveals that domestic consumption is below the potential level, and could be increased by 15-20 percent in a ten-year perspective.

According to FAO data, the total fruit output of the world was 503 million tons in 2006, which represents a growth of 23% compared to ten years before. The regions producing the highest amount of fruits are South America (20%) and China (16%). With its 15% share (87,3 million tons) (Eurostat 1), the EU-27 is also one of the global leaders. In Hungary, fruit production has declined by 42% during the past fifteen years. The Hungarian fruit crop of app. 0.8-1.0 million tons represents 0.2% of global production and 1,6% of the total harvest of EU member states. It is encouraging that a more one-third of the EU member states are self-sufficient from fruits, which means that most member states are potential customers.

According to FAO data, the total vegetable output of the world was 865 million tons in 2004, which represents a growth of 60% compared to ten years before. China has achieved the fastest rate of growth and currently accounts for half of the global production. The share of the EU of the global output was 7,7% percent (72,65 million tons) (Eurostat 2)

The cooperation producers, the well-organized work of professionals and the coordinated activity of producers' marketing organization (PO's) may resolve some of the problems affecting the sector. In 2006, 54 were still operating of the 100 PO's formed in the year of the accession. Nine of them have been finally recognized and further 25-30 organizations stand a chance of gathering sufficient strength to become significant economic operators on the long run. Their market share in the value of Hungarian fruit and vegetable production is below 10% yet.

The PO-s in the vertical and their role is achieved through the implementation of different tasks. The possible functions of the classification, packaging, storage and marketing activities are grouped. It is not necessary for each task with the PO, in this or any other additional tasks in addition to the supply organization.

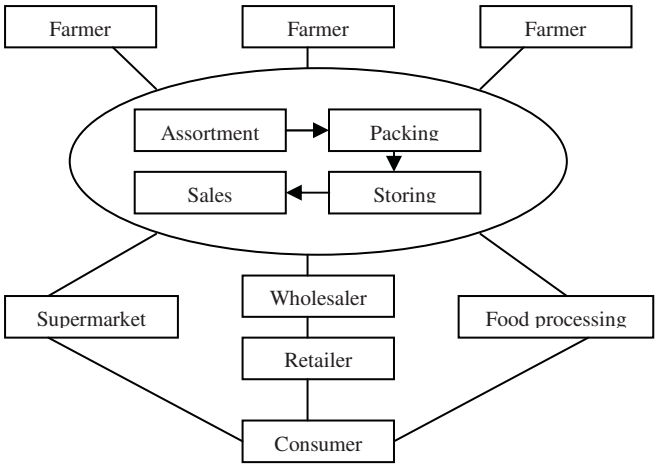

Figure 1: Processes in co-operatives (Padisák, 2002)

Processes in Co-operatives (Herdon and Rózsa, 2007):

- Main processes
- Supply process
- Storing processes
- Production processes
- Sales processes

Other complementary processes can be:

- Financial
- Accounting

Information systems in co-operatives

An efficient management and administration of the organization is a prerequisite for a high quality service. For many producer organizations in developing countries a computerized accounting and resource management system, which is a normal practice in developed countries, would help the managing team to run the company more efficiently and enable a better governance of the organization by the owners (Juga et al, 2007).

In Hungary, at least 10 employees, four fifths of companies use some kind of IT applications to support business processes. The penetration of the medium companies in excess of 90 per cent, and almost all of the large supply. Integrated management (ERP) system, are using 15 percent of business organizations, which employ at least 10 people, especially among medium and large (36 or 66 percent) as widespread.

We introduce a few software package, which can use be used by POs.

COOPWorks: The Food and Agriculture Organization (FAO) has launched a project with the Finnish, Dutch and Kenyan organizations together to work together to develop a management information system, which is typically an appropriate production and marketing organizations. The aim was to increase the effectiveness and competitiveness of these organizations with the COOPWorks system, which operates as a free software (Juga et.al., 2007).

Integrated Logistics System for Agricultural (ALIR): This system gives complete solution for producer organizations, producer groups production, sales, logistics, human resource management problems. This system is developed as add-on solution of the Microsoft Navision. This system is used in a few POs in Hungary.

The Infor:com: At the “Mórakert co-operative” the selection was based on a tender and the selected system is the Infor.Com which gives support for the co-operative on two main domains. One is the production management (infor.com) and the other is the finance. The “Infor” offers its Customer-First Product Strategy- a comprehensive approach to delivering value to customers based on the three key objectives: enriching customers’ investments, extending the value of the “Infor” solutions, and evolving through innovation to produce next-generation value. The “Infor”solutions are designed to help our customers manage the end-to-end business processes that are critical to their success, and to enable rapid response to changing business drivers by delivering solutions on an open service-oriented architecture. Infor Open SOA enables businesses to derive SOA benefit without complexity. It can play a major role in helping companies of all sizes become more competitive.

Havita case study

The first apple plantation the autumn of 1996 began with the initiative of caste-Coop Kft. Derecske and its surroundings have a long tradition of fruit and vegetable production. Attention to variety, listened in the light of technology, thanks to modern intensive orchards which have been a few years. (Felföldi, 2005) In 1999 of co-owners of the orchard was decided to establish also known as Sáránd Fridge Cooperative. One of these has been previously recognized PO in the 2001. The members of this installed for the first time, cherry and Japanese plum plantations. In early 2003, members may also be important in market member increase entered. 2004-he won the final approved PO address this year and finished the 2400 tons capacity cold store. And this year, a company designed to support information system.

At present there are 103 and 62 apple plantations where intensive cultivation is carried out cherry plantation common in 2002 which was added to 10ha Japanese plum plantation. These plantations are located in a block, 16 km from south of Debrecen Sáránd between the 47th and Derecske in addition to the main road.

By contrast, the area began in the Apple Derecske company organized and established the Havita PO. Since then, the PO is within about 60 members. It does not matter with a typical Kasza coop Ltd because of its relationship.

The organization's activities

The cooperative perform in particular sales and advisory activities, which started in 2003 and was characterized sale to industrial users and traders of sales by the broker. Havita opened to the commercial chains, as well as indirect export delivery in 2004. Trade partners are including the Cora Store, REAL Food Co. Ltd. Hungary. CBA Kereskedelmi Kft, Lidl. Foreign supermarket chains: Auchan, Sell Gross, Metro.

The cooperative's members commonly acquired in bulk the materials which needed for their products, such as crop protection agents, fertilizers, seeds and other materials, thus creating a more favorable price.

Organization's activities can be divided into a number of processes on the basis of content. (Felföldi, 2005)

- Marketing process includes the customer and the customer demand management, as well as other marketing activities.
- Production process: the proposal put forward during the course of the cultivation, the cultivation of the contracts, the purchase of basic and auxiliary materials, the production engineering necessary to ensure continuous production and the control.
- Logistics process: the transport of goods, warehousing, sorting, processing, management and organization of product acceptance.
- Trade process is the organization's most important activities of the Customer to develop and extend the search for new markets, sales price, the marketing activities carried out.
- Economic Process: business management planning to implementation, financial controlling and providing service to the investment activity.
- Human Resources Process: We understand under this, the organizational work of the institution development, staff training and development, etc...

- Work development process: the term strategies establish, evaluate their potential for development, production and set up a database and maintained it.

Only one person was employed officially to do the organization's activities. However, in cooperation with the Kasz-Coop Company not only 1 person activities in the PO. The division of labor is in the organization within functions and especially production. But this is only true if the organization includes members of the PO.

It works in cooperative, and like any organization there is also the main decision-making body, the General Assembly. The board of directors shall act as the organization's administration and representation, and the decision of any matter that does not fall within the competence of the general meeting. The supervisory role of management control and auditor reports expert's opinion. The management is head of the operational work.

IT Support in the Havita TÉSZ (PO)

The company is using computer assistance. The company has a total of 11 computers available. 5 pieces of computer is used in cold storage, the sales manager three and the accounts three computer. The company's Internet, it is a wireless network. 80% of the active members have computer and Internet. This is also due to the fact that the members belong to the younger age groups. The members of the PO and the PO communicate not by Internet connection.

The co-developed Web site is a very high standard, which was in 2006-prepared by an external company. The website is easy and logical structure. The design is very attractive and fully aligned with the company's image. It is full suitable for today's expectations, not only because we get information about the company, but the amount of goods as well. Apple picture of the various apple species, and the company's functioning.

If you'd prefer to see this page, you can finally show that the PO really has no web site, since the site's name is not Havita with, and still no word about the organization. Of course, however, the background is the PO, and any information contained therein is completely real.

Marketing activities are placed into a completely new footing, when the Derecske Apple brand was created. The products began to be marketed with a brand name not the PO name, and so advertising assets are developed accordingly. For this reason, that Derecske Apple is the title of official website and not the Apple Havita PO. The website is also linked to two domains: the havita.hu derecskealma.hu and also shows the same. This could be a solution to apply to minor changes are made to the content on this site, so only two of the domain name displayed. Two domain names might be unnecessary to maintain as well. It would be derecskealma.hu to keep the name, but could be beefed up with more, that the organization PO works activities.

Figure 2: Homepage of Havita PO

Online marketing is a very positive point of view that the "apple sale" in the title in the search engines displays the first page. Google show these words in 7. position. But you could also improve body "TÉSZ" (PO) of a title, since it is only the third site to be found, and a number preceded by PO. Other companies linked to the title page of the search engines are the first 5 cannot be found. Perhaps it would be worthwhile to extend the online marketing in that direction.

The five companies in the computer system help employees and managers work:

1. E-Link Information System

   Every company today needs to have IT support to resolve accounting and billing-related tasks. This system was introduced in 2004, then approximately 5 million Hungarian forints. Of course, before the introduction of custom-tailored software is completely. The company offered the system to 80% of its potential. The accounting and financial accounts are used primarily, to the most frequently used functions of the billing. The various privileges of the nearly 15 people use this system. This was pushed into the background in corporate decision-making by the following system. The talk will detail the structure of the system.

2. Excel Table

   Already, the corporate governance system also existed before and still in use today. This is a centrally used excel file, which was called. Remote access control can be achieved by remote workers. In this file fixed everything in the goods. Here you can monitor your movement of goods. State that out when the activity of the goods. This activity will be a man, each record of the day to day operations work. A man sets out, but the management can see the data.

   This system is automatically switched to the so-called e-link system. This file is in the down year was 1 million Hungarian Forint, and an external firm was prepared in close collaboration with the company.

The leaders of most decisions, this system helps.

3. Label print:

When you receive the goods, in whatever form, is due to the identification of the immediate packing of a printed label. The company achieved a total follow-up, the label contains such information, which is essential for the follow-up (good name, origin, picking date,). The company controls the GolabGap international organization, which provides the customers, that apple in the finished medicinal product, certified as a controlled planting of the unprocessed, toxic free, safe.

4. Refrigerated cooling system

The computer cooling system was placed together with the structure of the cold store. By contrast, can be monitored and adjusted to the various cooling parameters.

5. Professional

The company maintains a small meteorological station, and this data may also be become fixed computer to the Internet. The company analyze the help of professionals in the Netherlands is based on the data and determine when to apply plant protection procedures, helping members of the PO. The meteorological station and the associated IT supply almost half a million forints were.

E-Link

This caste-Coop software companies have been selected, mainly to him, and only then started to apply the PO at the well. The system is completely web-based, so the user is available almost anywhere. This is a mobile information system, which is part of a permanent (on-line) are in contact with each other, so the current data organization is able to operate effectively and flexibly. The e-Link security protection technology developed by Oracle to maximize, so the system can be totally calm on the web can be used via. This finding is a number of foreign and domestic banking systems for evidence.

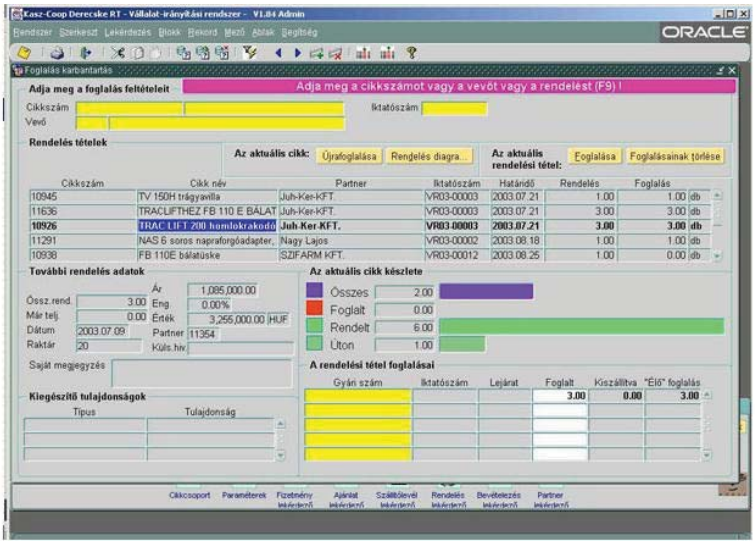

Figure.3: E-link system (www.e-link.hu)

The e-Link system is the data in graphic form, the so-called status icons and colors with displays. Besides the fact that the system is complex, a large number of data record, treatment is simple, uniform surfaces.

In addition, We would like to demonstrate how this software is based on the modules.

The software architecture:

- Personnel

- Filing, archiving of documents

- Communications

- Project Management

- Partner Module

- Business Opportunities

- Product

- Sales

- Supply Chain

- Warehouse

- Inventory

- Finance Accounting

- Tangible assets

- Production

- Driver Information

- Quality assurance

Bold of a letter they picked the modules are actually used by the company, and slanted those that are not yet. This system, although it has already begun to introduce in 2004-even during the introduction, there is almost always. Also, not everyone uses all the functions that could be. Continuously expanding number of functions and modules in second hand, as more and more aware of what is useful and what should be used. Thus, the company becomes increasingly modernized management.

Consequence

The access to producer organization is a great potential to farmers. Thus, they can only compete with foreign competitors. Abroad about the general level of IT support. In Hungary, there are also opportunities, and the appropriate software. We introduce some of software, which POs can use. Some companies have already recognized that this is what is important. Several locations have been successfully introduced in ERP systems.

The article introduces a producer organization, which has successfully used a number of information technology tools. We hope that more and more will follow this example.

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